The "Brunonian" or "molecular" movement is also noticed by Dr. Carpenter under the above head. He describes its general characters and the conditions under which it is liable to appear. He does not attempt to explain its cause further than by hazarding the somewhat vague and unsatisfactory surmises that it may be owing either "directly to some calorical changes continually taking place in the fluid," or to "some obscure chemical action between the solid particles and the fluid, which is indirectly promoted by heat." We strongly suspect that the above phrases do not represent any idea. The molecular movement, however, is certainly not owing to evaporation, as has been suspected, since it will take place "with its usual activity," in a drop of watery fluid completely surrounded by oil; and has even been known to "continue for many years in a small quantity of fluid inclosed between two glasses in an air-tight case." The author recommends beginners to study the appearance of this movement in mixtures of different densities, and with different kinds of powdered substances, so that they may not be misled by it in the course of their ordinary investigations.

The body of the work is devoted to a description of the most interesting microscopic appearances to be found in the vegetable and animal kingdoms. The author commences with the "protophytes," or plants of the humblest rank, and treats in succession of the minute structure of algæ, lichens, fungi, and other cryptogamia, monocotyledonous and dicotyledonous phanerogamia, protozoa, animalcules, zoophytes, molluscs, annulosa, crustacea, insects, and arachnida, and, finally, of vertebrate animals. These portions of the work require no comment, except that they illustrate, in a remarkable manner, the extensive erudition of the author and his unusual industry, both as a student and a writer. He finishes with a very interesting chapter on the "applications of the microscope to geological investigation," followed by a short notice of the most interesting microscopic objects derived from the inorganic world. The Appendix, by the American editor, Dr. Smith, is chiefly occupied with the consideration of the microscope as a means of diagnosis, the natural and morbid appearances of the solids and fluids of the human body, urinary deposits, &c. &c., subjects which are sufficiently extensive to require a separate treatise by themselves. The work cannot fail to be a valuable one for the student of nature, both as a book of reference and as a guide to independent investigation. J. C. D.

ART. XVII.—*Memoir on the Cholera at Oxford, in the year* 1854, *with considerations suggested by the Epidemic.* By HENRY WENTWORTH ACLAND, M. D., F. R S., F. R. G. S., etc., Fellow of the Royal College of Physicians, Physician to the Radcliffe Infirmary, Radcliffe Librarian, and Lee's Reader in Anatomy in the University of Oxford. 4to. pp. 172. London, 1856.

THE memoir of Dr. Acland presents a most able and interesting report on the cholera as it prevailed in Oxford, England, during the summer and autumn—from the beginning of August to the close of October—of 1854.

Everything calculated to throw light upon the etiology of the disease, is carefully recorded, and its history, from the appearance of the first cases to its decline and final disappearance, accurately detailed. Able and interesting, however, as the report before us unquestionably is, it tells us but the same story, with but little variation, we have learned from every preceding report of the epidemic wherever it has occurred. That it breaks out in the midst of a community, attains, more or less quickly, its acme, then rapidly declines, and ultimately disappears, without any one being able to identify the source from whence the disease originated, or the reason why that, for a certain season, the larger portion of a community should experience, to a greater or less extent, a special morbific influence, and then, without any appreciable cause, become entirely exempt from it. It is true, that every reliable history of the disease that reaches us records the fact that, under all those circumstances and conditions which, ordinarily, deteriorate the health of man, and while they give origin to various endemic maladies, invite the prevalence and augment the virulence of epidemics, the cholera prevails to the greatest extent and in its most malignant form. That these circumstances and conditions are incapable by themselves of generating the disease is, however, as satisfactorily proved as is their influence in increasing its prevalence and mortality.

The entire number of cases of cholera that occurred at Oxford, in 1854, was 194, of which 115 terminated fatally. The population of the town being 26,474, the cases per 1,000 were 7.33 and the deaths 4.34

Of the 194 cases, 108 were in females, and only 86 in males, of all ages. As the population of Oxford was composed of 13,197 males, and 13,277 females, consequently 6.52 in each 1,000 of the males, and 8.13 in each 1,000 of the females were attacked—and inasmuch as of the 115 deaths, 49 were males, and 66 females, it follows that the males died in the proportion of 56.9 to 43.1 recoveries, and the females in the proportion of 61.1 to 38.9 recoveries. There was, therefore, a greater tendency in females to be attacked by the cholera, and of those attacked, there was a greater chance of recovery than in the male sex.

We learn that in London, during the same epidemic, of 100 persons attacked between the ages of 15 and 25, 34.9 died. In Oxford, the mortality between the same ages, was at the rate of 42.85. In London, the mortality in those between 25 and 35, was 35.4 per cent.; in Oxford, 50 per cent. In London, the deaths in proportion to the cases, in those between 65 and 75 years, were 58.2 per cent.; in Oxford, in the proportion of 77.77 per cent.

Persons in easy circumstances suffered during the epidemic in Oxford the least; it was among the labouring, chiefly, that its ravages were experienced; of these fifty-six in each hundred attacked died. One medical man died—he had neglected serious diarrhœa, under which he had laboured for nearly a week. He was not engaged in attendance on cholera patients; another who had attended patients affected with cholera had severe and protracted choleraic diarrhœa, from which he recovered. Several other medical men suffered from diarrhœa. The nurses were tolerably exempt, only one died. The washerwomen did not suffer as a class. Dr. Acland remarks, that during the ninety days which may be said to have been the period of the epidemic, five men were engaged in emptying cesspools, during nearly forty nights. Not one of them had even diarrhœa. This last circumstance has been noted in other places, and suggests a very important question concerning the noxious or innoxious nature of collections of ordure, when freely exposed to the open air.

> "However urgent the other symptoms, no case," it is stated, "was, as the author believes, returned as cholera in which the evacuations were bilious. Of the more serious forms of diarrhœa, wherein cramps, vomiting, and even more or less collapse would occur, there were many cases in the city. But the mortality was very small compared to that of the cholera. It appeared *generally* in the same localities, at the same times, and with nearly the same intensity at the different periods, as the genuine cholera."

"If we examine," says Dr. Acland, "what is certainly known of the amount of diarrhœa, we have some curious information. Dividing the epidemic into four periods of three weeks each, commencing with August 6, and ending October 22, it appears that we have no certain record concerning the first five weeks, or until the last week of the second quarter. In that week there were returned 1,313 cases of diarrhœa; in the third quarter 2,603 cases; in the last quarter 527. These cases, it will be remembered, do not include choleraic diarrhœa—nor do they include cases prescribed for at the infirmary. Now, in the sixth week there were, out of every 1,000 persons, nearly 50 persons prescribed for on account of diarrhœa alone, by the medical men, independently of the chemists: in the third quarter (the seventh, eighth, and ninth weeks), nearly 100 in every 1,000: in the last quarter, 19.90 in every 1,000. If then we assume that, in the second quarter, the attacked were the same as in the third—as they were nearly with respect to cholera, and there is reason to believe that there were actually a greater number of diarrhœa cases in that quarter—and that the first quarter had as many cases as the last, then it follows that, at the least, 6,260 cases were attended by the regular practitioners on account of diarrhœa alone. Some of the cases were perhaps relapses; but as I have stated, the applicants at the infirmary—more than 400—are not included. There cannot have been, therefore, less than a fourth of the population, at the lowest estimate, actually treated by the medical men for this form alone in the manifestation of the pestilence. That very many more were under its influence may with equal certainty be concluded."

"With respect to the severer forms of diarrhœa returned as choleraic diarrhœa, 123 cases are entered in the first table. The deaths among these 123 were 14—or the proportion of 11.5 deaths to 100 cases. But it is known that many more occurred whose names and addresses were not returned, and which therefore I could not tabulate in respect to their residences, etc. The numbers returned to the Board in the second quarter of the disease were 165: in the third quarter, 61 cases." "Taking the reported cases in the two middle quarters as 226, and the deaths 14, we find the deaths in choleraic diarrhœa to have been only 6.2 in every 100 cases."

Dr. Acland presents a general result of the choleraic visitations of Oxford during the years 1832, 1849, and 1854.

The first interval of freedom from the pestilence was seventeen years; the second interval was five.

The cases per 1000 of the inhabitants in 1832 were, in round numbers, 8; in 1849 only 5; in 1854, 7. If we exclude from each year the cases in St. Clements, whereon the disease fell so heavily in 1832, the years of pestilence claim, in the order of their precedence, 5.4, 5.8, 7.2 cases per thousand of the inhabitants. The recoveries in proportion to the deaths were in the proportion of 51.63 deaths to 48.37 recoveries in 1832; 52.08 to 47.92 in 1849; 59.27 to 40.73 in 1854. The disease, therefore, excluding the exceptional cases of St. Clements, was more severe, numerically, and more fatal in the last than in either of the previous epidemics, and returned, as has been noted, after a much shorter interval.

In reference to the spread of the cholera at Oxford, during the year 1854; in the first three weeks but 3 cases occurred; in the succeeding three weeks, 83; in the next three weeks, 91; in the following three weeks, 16; in the thirteenth and last week, *one* case. It may be said, therefore, that the first and the last quarters of the epidemic epoch were occupied by the onset and the decline of the disease respectively, while the two intervening quarters showed it at its maximum. Or, if we look at the ascent of the disease up to the end of the sixth week, or the middle of the epidemic, we shall find that there were 12 cases in the first week of the second quarter, 35 in the second, and 36 in the third.

"The epidemic did not decline from this central point at the same rate as it increased, for the seventh week had 35 cases, and there were 37 in the ninth; but then, in the tenth week, the new cases fell to 11, nearly the same number as occurred in the fourth week. There were only 5 new cases in the eleventh, none in the twelfth, and one in the last." "If we inquire into what was the mortality in proportion to the cases in each of the quarters, the following may be noted. In the first quarter, of the *three* cases *two* were fatal; of the 83 cases in the second quarter 48 died, or 57.8 per cent. In the third quarter, out of 91 cases, 52 died, or 57.1 per cent.; and in the last quarter, of the 16 cases, 12 died, or 75 per cent.; and the only case which occurred in the last week died—from which it would appear that, after the first three cases, of which two were fatal, in the first quarter, the *number of cases* increased greatly in the second quarter, slightly in the third, and greatly diminished in the last; the *mortality* in the third quarter was rather less than in the second, viz: 57.1 and 57.8 respectively; and the *proportional* fatality of the disease materially increased in the last quarter. Again, referring to the *weeks*, it seems proper to notice that in the seventh week the deaths were in the proportion of 65.7 per cent., but in the eighth and ninth 57.9 and 48.7 per cent. respectively of the persons attacked. In the small numbers with which we are dealing, much stress must not be laid on such statistics, and yet they are noticeable."

In regard to the local causes which may have influenced the progress of the cholera in Oxford, Dr. Acland remarks that the disease, as well as diarrhœa, was most rife among the poor and destitute of the city; in some alleys, when meat was distributed to the inhabitants, the diarrhœa was arrested.

The city of Oxford may be divided into an upper and lower level, one portion of it being 16.47 feet above the average water level, and another twenty feet below the summit. If the cases which occurred in the three epidemics collectively, including St. Clements, be reckoned, it is found that 141 cases occurred in the upper level, and 362 in the lower. Estimating the population in the upper level at 14,200, and that in the lower at 12,300, it will be found also that, on the average of the three epidemics, there occurred 33.09 cases in each 10,000 of the people in the upper level, and 98 per 10,000 in the lower. Estimating the deaths at 54.30 per cent., on the average of the three epidemics, the deaths were at the rate of 17.97 per each 10,000 in the upper level, and 53.26 per each 10,000 in the lower level.

The parishes of Oxford, which—if we except, perhaps, certain limited blocks of houses—are the densest, were also the most severely visited by the disease. This, however, Dr. A. remarks, cannot be attributed to the density alone, but to other causes also. In London, it was noticed that the densest parts of the population were not the most severely attacked; on the contrary, the mortality was far higher in some of the more open than in the denser districts.

In his description of the topography of Oxford, Dr. A. points out the fact that the lowest and poorest parts of the city are also those which are the least well drained; and Mr. Ormerod's sanitary map of Oxford points out most strikingly the way in which the epidemic and contagious diseases are collected round special centres, which, as is shown by a map accompanying the memoir before us, are in the neighbourhoods where the drainage is deficient. But it is not, as Dr. A. remarks, imperfect drainage alone which is the cause of ill health, though unquestionably a fundamental cause. "Where the drainage is bad the basements are damp and foul. In old towns, the ground is in some places saturated with liquid ordure to an amount scarcely to be estimated, and the wells are more or less impure;" "and in districts where the water is impure the diseases above referred to are the most rife." The notable instance of St. Clements may be instanced. In 1832 there were, out of 174 cases of cholera in all Oxford, in that parish alone 74 cases, and in 1849 only three. During the former epidemic the inhabitants had filthy water from a sewer-receiving stream, and in 1849 from the springs of Headington, conveyed thither soon after 1832. In 1854, out of 194 cases, but 18 occurred in St. Clements—a proportional increase which would tend to show, what indeed we have various other evidence of, that the water supply, though it may be one mode, is not the only one of conveying the cholera poison.

In 1854 the influence of the epidemic, as in former years, was not experienced by the inmates of the city prison, while among those of the county jail, in its immediate vicinity, choleraic diarrhœa and cholera made their appearance. Upon inquiry, it was found that the supply of water for the prison was derived from a pool filled with putrid and putrefying matter. The pipes through which the water was conveyed were immediately cut off. Previously there had occurred twenty cases of choleraic diarrhœa and *five* of cholera, *four* of which proved fatal. From the day after that on which the supply of impure water was cut off, only three cases of choleraic diarrhœa and *one* of cholera—none of which were fatal—were reported during the remaining three weeks of the epidemic.

In the city of Oxford the water of many of the wells was deficient in quantity and bad in quality, especially in some of the affected yards, while the water supplied by the waterworks was from the river, which was loaded with impurities.

From the meteorological tables given by Dr. A., it appears that in all the years of cholera the mean pressure of the atmosphere at Oxford was greater than the normal pressure. The year 1832 was distinguished by great regularity of temperature. Only one month, October, was abnormal, and that very slightly. In 1848 the months of February and April were abnormal, the former in excess, the latter in defect, as three to one and four to one respectively—that is to say, such differences are likely to occur every third and fourth year. The year 1854 presented greater irregularities. Six out of the twelve months were slightly abnormal; the low temperature of June and the high temperature of September are chiefly noticeable, the former in the proportion of five to one, the latter of six to one. The mean temperatures of all three years were normal.

In the year 1854 the deficiency of humidity, and the excess in the weight of the air are noticeable. There was great comparative steadiness of temperature in 1832, and the contrary in 1854. In 1832, in three months only was the range *greater* than the normal range—whereas in 1854 there were only three when it was *less*. The greatest excess was in September, 1854, which was abnormal in the proportion of 35 to 1. The same month in 1832 was also abnormal, but only in the proportion of 4½ to 1. The range of the year was in both cases abnormal, in 1832 the proportion being as 3¼ to 1, in 1854 as 25 to 1.

In the neighbourhood of London there was, in 1832, a deficiency of 7 inches rain; in Oxford, there was an excess of ¾ of an inch. In 1849, the deficiency near London was $\frac{6}{10}$ths of an inch; in Oxford it was 2.14 inches. In 1854 the annual deficiency about London was 5.93 inches; in Oxford 9.57 inches.

In respect to the prevailing winds; during the severest period of the epidemic of 1832, the wind had a decided bias towards the N.W. The same was also perceptible in a still greater degree in 1854, but not so in 1849. The mean annual direction in 1832 and 1849 agrees nearly with the normal direction. In 1854, however, the annual deviation is as much as 39° towards the

N. In each of the three years there was a deficiency of S. wind, and in 1832 and 1849 a deficiency also of W., but in 1854 there was the large excess of 4.37 in favour of W. In December of that year there was no E. wind.

The subjoined table presents the principal results of the meteorological observations:—

	Atmosph. pressure.	Mean temperat.	Range of temperat.	Amount of rain.	Direction of wind.	Force of wind.	Days of hail.	Thund. and lightning.	Aurora borealis.
1832	Abn. +	Norm. +	Abn. —	Norm. +	Norm.	?	Abn. —	Abn. —	Abn. —
1849	Abn. +	Norm. +	?	Norm. —	Norm.	?	Abn. +	Norm.	Norm.
1854	Abn. +	Norm. +	Abn. +	Abnor. —	Abn.	Abn. —	Abn. +	Abn. +	Abn. +

"On comparing the details of this table," says Dr. A., "the reader will not fail to remark how few similar features the three years present. In fact, the abnormal excess of atmospheric pressure and the normal excess of mean temperature, are the only conditions common to them all. The years 1832 and 1854 are both very abnormal, but in every other respect except those just mentioned, in *opposite directions*. Hence, we might be led to infer, that meteorological excesses in either direction are equally favourable to the development of the disease. But then how are we to account for its appearance in 1849, which, viewed altogether, is by no means an abnormal year? There is, however, one point which the table brings out very strongly, that is, the extraordinary character of 1854. Except in the solitary condition of mean temperature, everything is abnormal. Excessive in atmospheric pressure, and daily variations of temperature, deficient in rain and wind, abnormal in the direction of wind, excessive in the display of electrical phenomena—as if to complete a meteorological paradox, this same year, remarkable for the abundance of harvest, was not less remarkable for pestilence and its consequent mortality."

Dr. A., in remarking on the relations between the atmosphere and the disease, observes:—

"The reader, on looking at the diagram placed at the end of the volume, will notice that in Oxford there were three distinct periods of increase in the number of cholera cases. The first from September 5, to September 13; the second from September 13, to September 28; and the third from September 28, to October 8. The diarrhœa recorded, followed nearly the same rule, as did also the choleraic diarrhœa. It would needlessly detain the reader to enumerate, in words, the numbers which he can see more graphically presented in the diagram; but, his attention should be directed to some coincident phenomena expressed by the sheet before him. 1st, It is truly interesting to see the way in which the general curves of the diarrhœa, choleraic diarrhœa, and cholera followed each other—suggesting, as far as one locality may suggest a theory, that there is some common agent concerned, more or less, in producing all three forms of disease. He should especially notice, for instance, how on September 18, when there was a great rise in the diarrhœa cases, viz: from 178 new cases to 226, this rise was coincident with the highest number of cholera cases in the second group, and with all but the highest of the choleraic diarrhœa—though this is not *always* the case. On the 22d, the diarrhœa cases fell when the cholera rose, but *the choleraic diarrhœa* was that day at its maximum. It seems as though the cause, whatever it be, which produced diarrhœa and choleraic diarrhœa, acted on that day rather with intensity on individuals, than extensively on the population. Again, the diarrhœa fell from 118 new cases, reported on the 27th, to 68 on the 28th; on this last day there was *no* new case of cholera. The diarrhœa rose again to 115 new cases on the 2d of October, and the cholera cases rose again to 9 new cases."

"Between the 27th of August and the 16th of October, which may be called the limits of the mass of the disease, excluding a few outlying cases at the beginning and the end, there were, as has just been said, three periods of increase, and of course two intervening periods of diminution. Exactly the same thing happened with the *ozone*, and at the same period—with this difference only, that whereas the greatest amount indicated by the ozonometer in the first period coincided with the worst cholera day; in the two subsequent periods the maximum of ozone followed the maximum of cholera. Of these facts, assuming a connection between them, there may be two explanations, either that the rise of the ozone caused the rise of the cholera—the first group—or that the rise of the ozone preceded or caused the subsequent period of cholera disease. This last view is scarcely applicable to the second and third group, for, as I have said, the maximum of ozone appeared while the cholera was on the decrease. It need hardly be said that one such coincidence is insufficient to establish a connection, still less to show its nature; whereas, on the other hand, it is quite impossible that the observer should not be struck with the fact of the coincidence of these four masses of diarrhœa, choleraic diarrhœa, cholera, and ozone. It may as well be added here, once for all, that in the collection of the statistics of these cases of disease, the medical practitioners were wholly unaware of the nature of each other's returns, and that, therefore, although the returns themselves may not represent with absolute accuracy the precise number of cases that occurred, it is most likely that any errors which may exist, mutually counterbalance each other, and that the curves really represent the actual course of the disease.

"On the 8th of September, the centre of the first period of increase of the disease, the temperature fell, and there was far less difference between the maximum and minimum of the thermometer than on any previous day for a week. From that day to the 13th, the maximum rose again, the cholera diminishing; but on the 18th, the centre of the next period of increase, it had again fallen. On that day, however, there was greater variation between the extremes of temperature than on the two preceding days. The maximum of the thermometer was on the increase on the day of the cessation of the second cholera period; but then, the minimum the day before had been lower than on any day for three months. At the maximum of the third period the thermometer was falling, and at the termination of this epoch it was again rising. So that we cannot predicate any one thermometric condition as common to these three periods.

"The weather was unusually fine, dry, and clear. In the first cholera period, and the third, the sky was comparatively free from cloud, on the day preceding and following the lull in the disease. After the second period there was no cloud, but at the next great lull, as in the centre of the second or middle period of increase, the sky was all but wholly overcast. Upon looking at the line formed by the degrees of moisture in the air, it will be seen that, on the days preceding the first two cholera periods, the air had been becoming more dry, and preceding the last period, more fully saturated. No rain fell on the maximum days of the two first cholera periods, or on the day of the material decline of the disease, September 27. But, a little fell on the maximum day of the third period, and on the minimum day which followed it.

"Contrary to the opinion which has been gaining ground on apparently sufficient data, we do not find that a general stagnation of the air is a necessary accompaniment of the epidemic. For although on the central day of the last period of increase there was scarcely any movement of the atmosphere around Oxford, it was blowing fresh during the central period—so fresh as to blow down the tents in the field of observation—as it did also during the decline of the disease. And the direction was by no means uniform. It was mainly northerly previous to the first period, southwest previous to the second, and northerly again previous to the third.

"During the first and third cholera periods the barometer was steadily falling, and continued to fall for some days afterwards. During the main central period it was steadily rising, and continued upon the whole to rise, excepting on one day of storm, Sept. 24, until the day before that of the great lull of the disease, Sept. 28, when it was falling, as it continued to fall chiefly during the height of the last period. It rose again, and fell an inch, in the fortnight during which the pestilence died out."

"The reading of the barometer here, as in London, is shown by Mr. Johnson to have been unusually high, as was the mean temperature, it being remarked by him that these two conditions were common to our three cholera epidemics, and the only conditions that *were* so. With us, as in London, the *range* of temperature was, this year, during a part, but not during the whole of the cholera period, less than usual. Of fog, mist, and haze, we here observed, I believe, less than is frequent with us. If, during the cholera period, we had two periods of calm, we had one period, and that the centre of the epidemic, of very considerable movement; in fact, the horizontal movement of the one or two periods before and after the centre of the epidemic exceeded that of any day in the previous ten weeks. And, lastly, especial attention must be called to the fact, that with us there was a greater amount of ozone shown on some days than on any previous day, for eight weeks, and that the total value of Mr. Johnson's ozone notation in the central week of the cholera—Sept. 17 to 24—amounted to nearly 37, and in no other week, for ten weeks, to 25."

We pass over the chapters on the treatment of the disease, on the theory of the cause or causes of the disease, and its mode of extension. From the first no important conclusions are to be deduced, and the second comprises views that can be considered in no other light than as mere hypotheses, neither borne out by the general facts on record having a bearing upon the etiology of cholera, nor by the special facts which the author has collected with great care, and recorded with much apparent candour, in reference to the occurrence, progress, and decline of the disease in Oxford.

No one doubts, according to Dr. A., that during a cholera period persons die of diarrhœa and of choleraic diarrhœa, without passing into cholera, and, also, that such cases do oftentimes pass into cholera. We have no disposition to dispute the general fact here stated. To us, however, it is very evident, that the diarrhœa and cholera are merely grades or stages of the same disease—the effects of the same morbific agent upon the system—acting with more or less intensity, or upon individuals more or less or differently predisposed to their action. The separating the initial diarrhœa from cholera has, we believe, been productive of not a little mischief—it has interfered with our investigations into the true pathology of the disease—retarded our acquaintance with its proper management, and led in numerous instances to a fatal security, and a careless and inefficient treatment, during the only period when the disease may with cetainty be controlled by the physician.

The hypothesis of Dr. Acland is, that the diarrhœa, simple and choleraic, prevailing during cholera seasons, is produced by atmospheric influence—meaning thereby the general cosmical conditions prevailing—without any specific poison, and genuine cholera by this same atmospheric influence, operating upon the discharges from the bowels, and producing from these a specific poison which is capable of generating cholera in the individual from whom the discharges came, susceptible of the change alluded to, or upon other persons: the discharges being innocuous, or incapable of communicating cholera until so changed; but when thus changed, either within or without the body, capable of distribution throughout the atmosphere—probably either in a dry or in a gaseous state, and absorbable through the lungs—or capable of solution in water and of absorption by the digestive organs. In other words, one cause—the atmosphere—produces the first group of disease, and along with the disease, an organic product—alvine discharge—which is innocuous until altered by the same cause which produced it, when it becomes the cause of the second group. "So that it might be theoretically, and perhaps truly, said," remarks Dr. A., "that if the cause which produced the diarrhœa ceased before the discharges could be acted upon, then they would remain forever innocuous."

From this hypothesis Dr. A. hazards the following general statements :—

"1st. Diarrhœa always coexists with cholera in any given locality, and is not communicated from person to person.

"2d. Cholera may arise without the suspicion of contagion.

"3d. Cholera may certainly be conveyed from place to place by human agency.

"4th. It can scarcely be any longer doubted that the evacuations of cholera patients are capable of communicating the cholera.

"5th. It is quite certain that in the majority of cases, the cholera evacuations do not communicate the cholera.

"6th. It is quite certain that in localities apparently exceedingly prone to development of cholera, the cholera which is imported to them may not be propagated."

It is chiefly from the very excellent account presented in the memoir before us of the history of the rise, progress, and cessation of the epidemic of 1854, in the city of Oxford, and the careful collation of all those circumstances arising from the nature of the location, the character and condition of the population, and the prevailing atmospherical phenomena, by which the production and spread of the disease may have been more or less inflamed, or its character, as to mildness or malignancy, to a greater or less extent modified. In these respects, however, it constitutes a most valuable contribution to our materials for the formation of a correct theory of the etiology of cholera. It is true the data furnished by Dr. A. are insufficient of themselves to form the basis of any general conclusions, but are invaluable for comparison with observations of a similar character made at other places, during former, contemporaneous, or subsequent occurrences of the epidemic.

The following are presented by the author as a summary of the general conclusions deduced by him from the fact recorded in the present memoir.

"1. The history of both the city and the surrounding district unite in giving weight to the belief in the origin of cholera without communication with other cholera districts.

"2. Both the city and the district give evidence of the occasional communication of the disease from place to place, and from person to person.

"3. They both lead us to the conviction that places, and attendants on cholera patients, may enjoy a perfect immunity from contagion.

"4. From the survey of the city, we are inclined to believe that this immunity is less probable in proportion as less attention is paid to the destruction of the evacuations.

"5. Contact with the evacuations is therefore exceedingly dangerous.

"6. The hypothesis which refers diarrhœa to the state of the atmosphere, and cholera to the metamorphosis of diarrhœa evacuations by and in that atmosphere, derives support from these considerations.

"7. The poison of the evacuations may be conveyed through the air, or by the agency of water.

"8. Therefore, poisoned water, though one means of spreading the disease, is not the only means.

"9. For these reasons, and from the facts observed, we may conclude, and do assert, that crowded dwellings and imperfect ventilation are dangerous in the highest degree, during the presence of a cholera atmosphere, to those who are subjected to them, just as they are ruinous to health at other times.

"10. We must, therefore, conclude, that such dwellings, and such bad ventilation, are dangerous, not only to the persons exposed to them, but to the whole district or town which surrounds them.

"11. A low scale of diet favours diarrhœa, and a better diet tends to check it.

"12. Occupation exercised no marked influence in this district, and indeed persons in easy circumstances were more attacked, proportionally, than night soilmen, who work mostly in the open air.

"13. The lower half of this city was most attacked, but the lives of those who reside in the upper and drained portions are unquestionably endangered by the condition of the lower and undrained parts.

"14. Preparations for epidemic disease should not be left till the disease appears. There should, therefore, be wards, in every town, proper for receiving persons suffering from such diseases."

As an appendix to the memoir Dr. A. presents a brief sketch of the present sanitary condition of Oxford, and "the arrangements which a wise community would adopt beforehand to mitigate the terrible scourge of coming epidemics." Under the heads of ventilation, the construction and location of dwellings, drainage, provisions for the medical attendance of the poor, the connection between mental cultivation, physical improvement and health, recreation, etc., he treats, most pleasantly and wisely, questions of immense importance to the welfare, happiness, comfort and healthfulness of every community. It is true, he advances on these subjects but little that is new to those who have made themselves familiar with the well established principles of hygiene in all its several bearings—they cannot, however, be too often urged upon the attention of the municipal authorities of towns and cities, who, unfortunately, from their ignorance of them, either blindly perpetuate, by their acts, a state of things destructive of the health of their constituents, or blindly tolerate a condition of things prejudicial to the health and well-being of the community, and which invite the occurrence in its midst of the most severe forms of epidemic disease, or give to them, when they occur, increased extension and malignancy. D. F. C.

ART. XVIII.—*The Medical Profession in Ancient Times. An Anniversary Discourse delivered before the New York Academy of Medicine,* November 7, 1855. By JOHN WATSON, M. D., Surgeon to the New York Hospital. Published by order of the Academy. New York, 1856. 8vo. pp. 222.

IT is of good augury that the attention of American physicians is beginning to be directed towards the history of medicine. The infant man, the infant state, the infant institution, takes no thought of its origin or genealogy, but, on reaching a maturer degree of development, recognizes the eternal laws which govern the world, and turns eagerly to the past for light to enlighten the present and the future. The medical profession in this country, if it may congratulate itself on a freedom from certain trammels which authority and custom impose upon the fraternity in Europe, has no reason to boast of its share in that precious legacy of knowledge which the past has bequeathed to it. In whatever else we may excel, we are certainly inferior to the rest of the civilized world in an acquaintance with medical history. Various indications have been given, however, that the defect is not unseen, and that there is a disposition to correct it. The recent translation of Renouard's history, and the present essay, are among these indications. The first named work professes to treat summarily of medicine from its origin to the nineteenth century, while the latter claims only to afford a sketch of its progress in the Greek, Alexandrian, and Roman schools.

In looking at the manner in which Dr. Watson has performed the difficult task of condensing his materials into a very narrow space, we cannot refrain from congratulating him on the interest with which he has invested the sub-